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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,081	10/12/2001	Weiping Li	WCT-7031	1912

7590   11/03/2004

Martin Novack
17414 Via Capri East
Boca Raton, FL 33496

EXAMINER
LE, VU

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Supplemental

Office Action Summary

Application No.	Applicant(s)
09/977,081	LI, WEIPING
Examiner	Art Unit
Vu Le	2613

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-12* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____ .
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ .
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____ .

U.S. Patent and Trademark Office
PTOL-326 (Rev. 1-04)   **Office Action Summary**   Part of Paper No./Mail Date 4

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention
by the applicant for patent; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the
applicant for patent, _except_ that an international application filed under the treaty defined in section 351(a) shall have
the effects for the purposes of this subsection of an application filed in the United States only if the international
application designated the United States and was published under Article 21(2) of such treaty in the English.

2.   Claim 1, 3, 5-7, 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by

van der Schaar et al, US 2002/0006161.

Re claim 1, van der Schaar et al discloses a method for encoding frames of input

video (fig. 3a), comprising the steps of:

processing said input video ("original video", 106) to produce a compressed base

layer bit stream (110);

processing said input video to produce a compressed enhancement layer bit

stream (150");

identifying a region of interest in a video frame (section 0023);

and enhancing the quality of the region of interest by providing additional bits for

coding said region (section 0023, in this segment, van der Schaar et al discusses

transmitting "designated areas" within an image at a higher priority than other areas of

the image. In other words, designated areas are regions of interest being coded with at a higher priority i.e. with more bit allocation than other areas of the image).

Re claim 3, the method as defined by claim 1, wherein said step of providing additional bits for coding said region comprises providing additional bits for said region in the compressed enhancement layer bit stream (w/r to discussion in claim 1, also see sections 0023-0024).

Re claim 5, the method as defined by claim 3, wherein said processing to produce a compressed enhancement layer bit stream includes a bit plane shifting step, and wherein said step of providing additional bits for said region includes increasing the bit shifting values in said region (sections 0025-0026).

Re claim 6, the method as defined by claim 1, wherein said step of processing said input video to produce a compressed base layer bit stream includes forming motion vectors, and wherein said step of identifying a region of interest in a video frame includes basing said identifying on said motion vectors (fig. 3a: "motion estimation/compensation", also sections 0037-0038, in these segments, the position of areas of interest are inherently provided by the motion estimation, which is used to detect motion vectors. It is noted that '161 is for MPEG-4, which is the coding protocol for image object segmentation or region-of-interest).

Re claim 7, the method as defined by claim 3, wherein said step of processing said input video to produce a compressed base layer bit stream includes forming motion vectors, and wherein said step of identifying a region of interest in a video frame

includes basing said identifying on said motion vectors (the limitations have analyzed and rejected w/r to claim 6 above).

Re claim 9, the method as defined by claim 6, wherein said step of identifying a region of interest in a video frame based on said motion vectors includes basing said identification on the magnitude of motion vectors (w/r to claim 6, also it is inherent that motion estimation disclosed in '161 not only detects motion vectors, but also provide identification on the magnitude of motion vectors because motion estimation needs to know the magnitude of motion vectors to identify the optimum motion vector for compensation).

Re claim 10, the method as defined by claim 6, wherein said step of identifying a region of interest in a video frame based on said motion vectors includes basing said identification on the intensity change of neighboring regions based on motion vectors (w/r to claims 6 and 9, also it inherent that motion estimation disclosed in '161 evaluate motion vectors based on identification on the intensity change of neighboring regions because this step has to take place in order to determine the minimum motion vector).

Re claim 11, the method as defined by claim 3, wherein said step of processing said input video to produce a compressed base layer bit stream includes forming motion vectors and determining motion compensation values, and wherein said step of identifying a region of interest in a video frame includes basing said identifying on said motion vectors and said motion compensation values (the limitations have been analyzed w/r to claims 6, 9 and 10, furthermore fig. 3a shows motion estimation and compensation are involved).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 2, 4, 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable

over van der Schaar et al, US 2002/0006161 (hereinafter '161) as applied to claim 1

above and further in view of van der Schaar et al, US 6,501,797 (hereinafter '797).

Re claim 2, van der Schaar et al '161 discloses providing additional bits for

coding designated areas or region of interest for enhancement, but fails to disclose

whether said region comprises providing additional bits for said region in the

compressed base layer bit stream as claimed.

van der Schaar et al '797 discloses providing additional bits for said region in the

compressed base layer bit stream (fig. 3: 322, col. 7, line 39 to col. 8, line 19, in this

segment, van der Schaar et al discusses the output signals of base layer adjust or

monitor the operation of the enhancement rate allocator circuit "358").

Taking the combined teaching of van der Schaar et al '161 and '797 as a whole,

it would have been obvious to implement providing additional bits for coding designated

areas or region of interest for enhancement layer coding by providing additional bits for

said region in the compressed base layer bit stream as claimed for the benefit of

improving coding efficiency of the enhancement layer coding and improving image

quality ('797 col. 2, line 60 to col. 3, line 11).

Re claim 4, the method as defined by claim 2, wherein said processing to produce a compressed base layer bit stream includes a quantization step, and wherein said step of providing additional bits for said region includes decreasing the quantization step in said region (w/r to discussion in claim 2, furthermore, base layer allocator "322" regulates the bit amount by controlling the quantization "316". Decreasing quantization step translates to increase bit amount and vice versa).

Re claim 8, the method as defined by claim 4, wherein said step of processing said input video to produce a compressed base layer bit stream includes forming motion vectors, and wherein said step of identifying a region of interest in a video frame includes basing said identifying on said motion vectors (the limitations have analyzed and rejected w/r to claim 6 above. Claim 2 provides reasons/motivation for combined teaching).

Re claim 12, the method as defined by claim 4, wherein said step of processing said input video to produce a compressed base layer bit stream includes forming motion vectors and determining motion compensation values, and wherein said step of identifying a region of interest in a video frame includes basing said identifying on said motion vectors and said motion compensation values (the limitations have been analyzed and rejected w/r to claim 11. Claim 2 provides reasons/motivation for combined teaching).

Contact

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Le whose telephone number is 703-308-6613. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 703-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
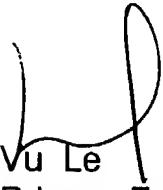
Vu Le
Primary Examiner
AU 2613
(703) 308-6613
Vu.Le@uspto.gov